

CORROSIVES



By

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Introduction:

- Substances have **RAPID, LOCAL & DESTRUCTIVE** action on any tissues, which come in contact with, as **MUCOUS MEMBRANES & SKIN.**
- Commonly available for household use.

Classification:

Corrosives

Acids (H)

Alkalis (OH)

Na OH ,KOH

Others

Hydrogen peroxide.

-Button battery

↳ may erosion effect

Organic

Carbolic, oxalic

Inorganic

HCL, H2SO4

-oxalic acid
* hypocalcemia
* affect kidney

-Carbolic acid
* affect heart

carbolic acid
طبيخ

طبخ البير
طبخ البير

Common Uses of corrosives

Alkalies

- Household bleaches: (المنظفات الصناعية)
- Detergents: (مزيلات الدهون)
- Drain cleaners: (مواد تسليك الأحواض)
- Potash: KOH الصابون السائل

Acids

- Some drain cleaners.
- Car batteries.
- Rust removers.
- Metal cleaners.





chemical
burn.



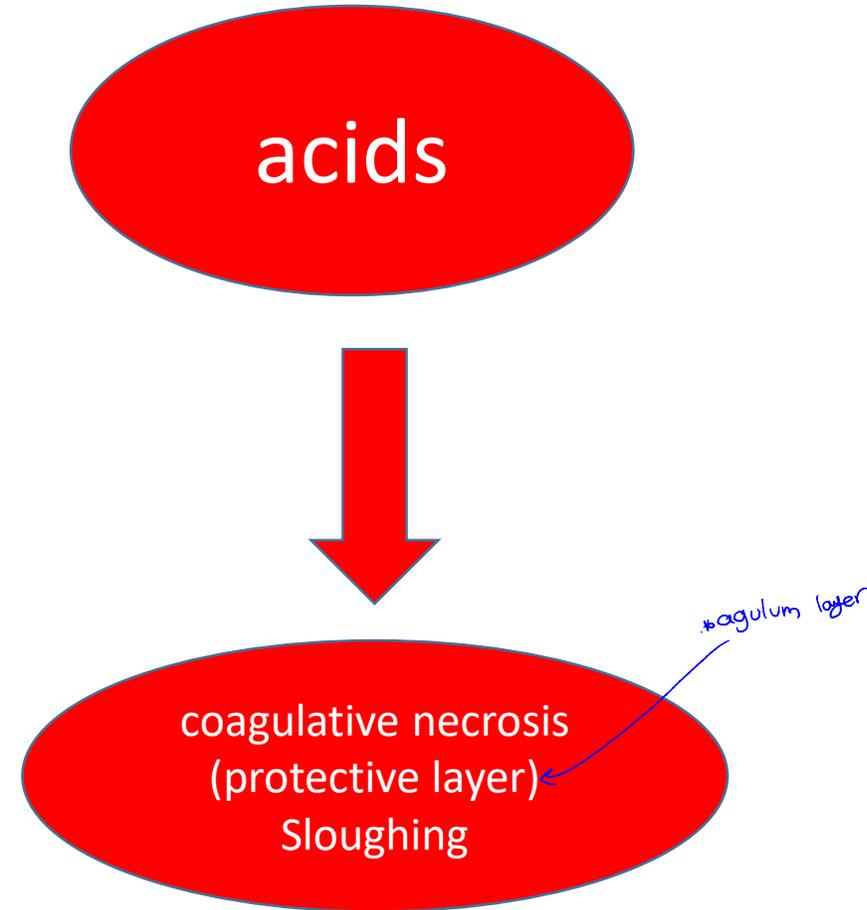
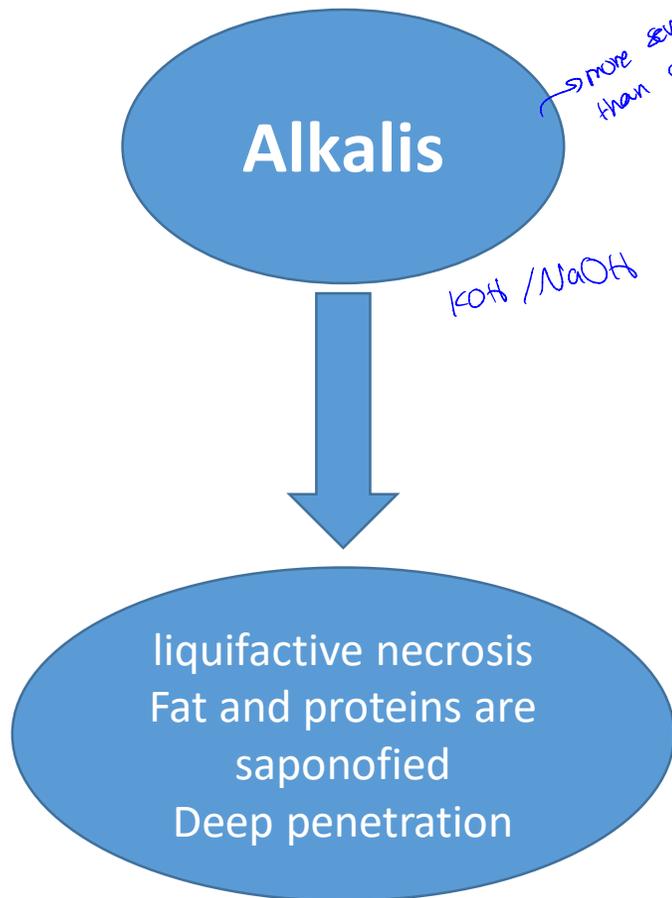
ulcer.



ulcer.

Mechanism of Action

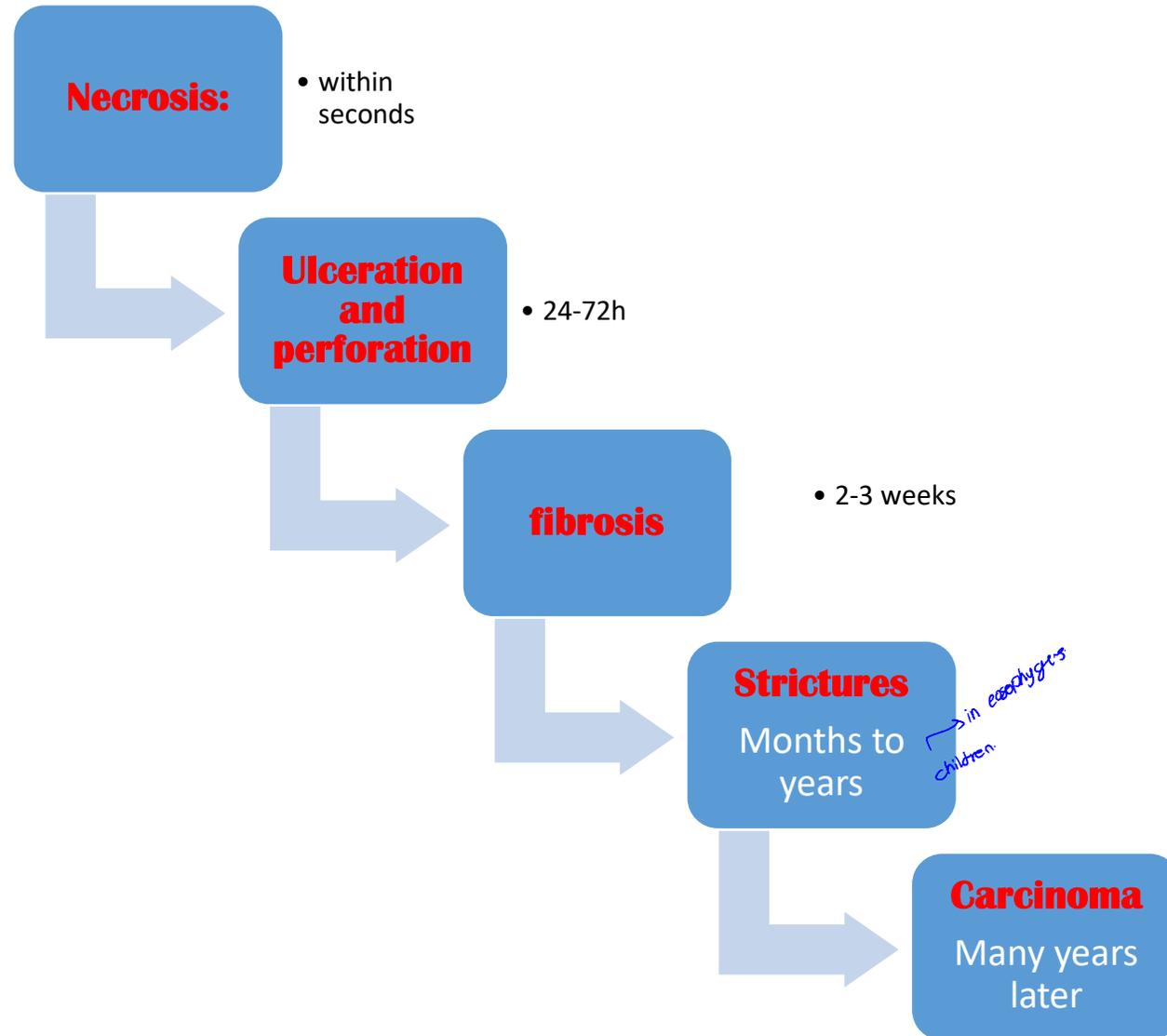
→ necroFactiv effect.



Factors affect the severity of injury

- 1) PH & Concentration: pH $\lt 3$ or $\gt 11$ or high concentration.
- 2) Volume of the caustic agent.
- 3) Formulation of the caustic agent: fluid \gt solid.
- 4) Contact time.
- 5) Food in stomach: \downarrow the effect of caustic.

Consequences of Caustic Injury



Clinical Presentation

GIT

Severe pain of lips, mouth, throat, chest and abdomen

Excessive salivation

Dysphagia and odynophagia

hematemesis

Symptoms and signs of GI perforation

Respiratory system

Cough

Dyspnea

Bronchoconstriction

Pulmonary edema

Chemical pneumonitis

Eyes and skin

- Pain at the site of exposure
- Burns at the site of exposure
- Erythema and vesicle formation

COMPLICATIONS

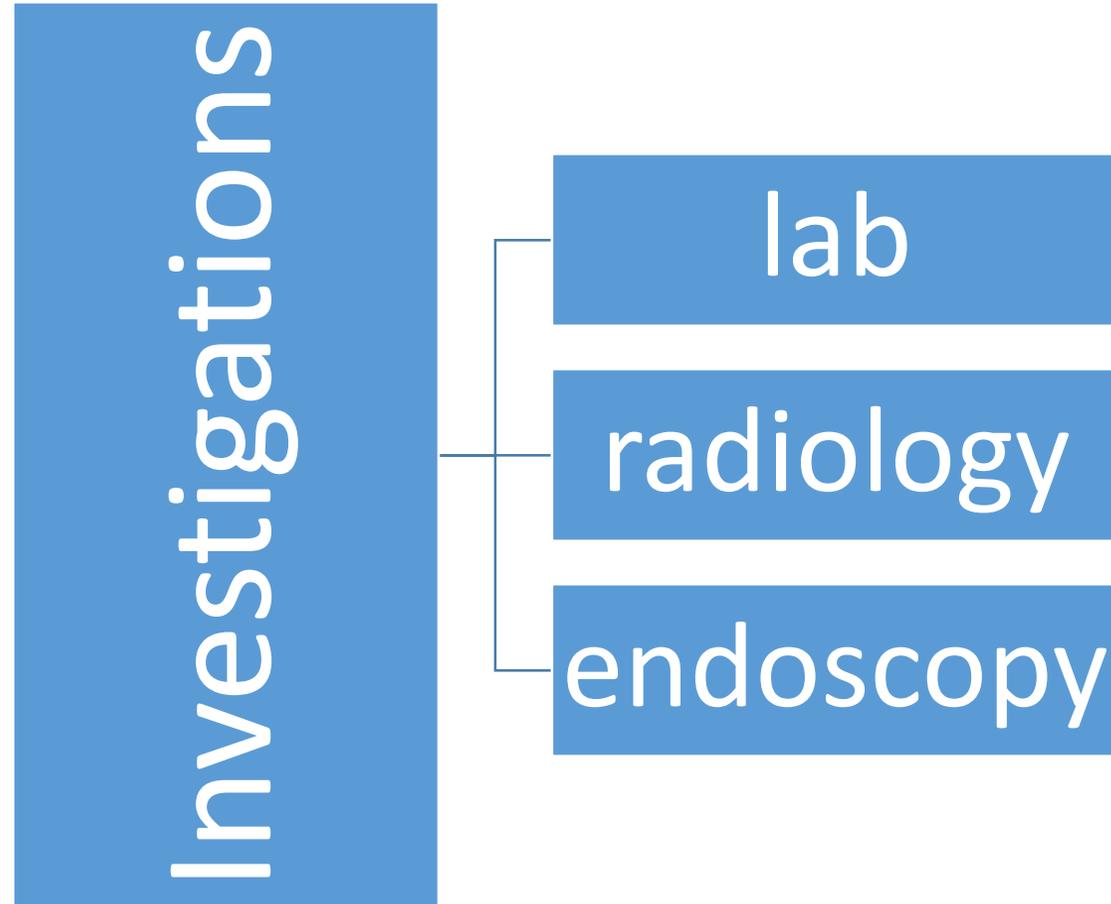
1 - Acute Complications

- a – **Neurogenic shock** from severe pain.
- b – Upper airway **obstruction**.
- c – GIT **hemorrhage**.
- d – Esophageal & gastric **perforation**.
- e – Tracheo-bronchial necrosis. */ fistula.*
- f- Obstructive lung disease.

1 - Chronic Complications

- a– fibrosis and **stricture** formation
(esophageal and pyloric stenosis).
- b- Squamous cell **carcinoma** of
esophagus

Investigations



Laboratory investigations

- 1 - CBC
- 2 - Serum electrolytes
- 3 - Coagulation profile.
- 4 - Blood urea & Creatinine.
- 5 - Arterial blood gases
- 6 - Stool analysis for occult blood.

Radiology:

- 1 - Chest x-ray to exclude or prove aspiration pneumonia & mediastinitis.
- 2 - Abdominal x-ray in erect position to detect any free air in case of perforation.
- 3- Barium swallow can be done after 3 weeks to assess the degree of stricture & obstruction.

*if there's perforation
to see air under diaphragm*

Endoscopy:

اهم اشي
بوي ليعال
Scale
المنهج المقصر

Hot endoscopy in 1st 24 hr, can be done to assess the severity of esophago-gastric injury. It's contraindicated if respiratory distress is present.



لو عالج بوي ليعال
Tissue ⇒ inflammation
Perforation بوي ليعال

Management:

1- First – Aid measures: (can done at home and in the way to hospital)

- Diluents & demulcents: milk, egg white. → to prevent emesis.
- Control pain by strong analgesic. → I.M.

B – Stabilization:

- Secure the patient air way.
- Establish I.V line
- Monitor vital signs closely.
- Monitor fluid & electrolyte status

Initial Management

* No emesis
* No gastric lavage
* No Activated charcoal

NO

NO

NO

NO

NO

NO

NO

NO

NO

No
neutralization
???

exothermic →
Heat →
↑injury

اذا شاركن
والطبخه
تسبب انه
يحدثه ولو بقليل
↑injury

NO Emesis
??????

- **Re-exposure** of the esophagus to caustic leads to further damage.
- ↑ risk of perforation.
- ↑ risk of aspiration.

NO GATRIC
LAVAGE ????

PERFORATION
NO SYSTEMIC
EFFECT

NO ACTIVATED
CHARCOAL???

- a – Poorly **adsorbs** corrosives.
- b- **Block** the visual field of endoscopy.
- c – May cause chemical **mediastinitis** if perforation occurs.
- d – If aspirated **bronchiolitis obliterans** occurred

Symptomatic & supportive treatment

- 1 - Antibiotics: used to prevent sepsis. (infection)
- 2 - Steroids: Started within 1st 48 hours to decrease tissue injury & stricture formation & prevent fibrosis & acute pulmonary edema.
- 3- Esophageal stenting:

MANAGEMENT OF COMPLICATIONS

- **Stricture management**
- Dilatation therapy: This is done 3-6 weeks after injury.
- Surgery: Esophageal strictures resistant to dilatation therapy may require surgery that includes resection of stricture surgically and esophageal bypass surgery.

Case study

- A child aged 6 years; wrongly drink potash instead of water:
- Potash is (acid – alkali – neutral agent).
- Which one of the following can be done and why:

Induction of emesis.

Gastric lavage.

Administration of activated charcoal.

give weak acid.

potash

- What do you do if you asked to manage at home? milk + analgesic